PART III: Alternatives Including the Preferred Alternative

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PART III. ALTERNATIVES, INCLUDING THE PREFERRED ALTERNATIVE

Part of the process for designating a portion of the Olympic Coast as a National Marine Sanctuary involves the analysis of institutional, boundary, management, and regulatory alternatives. These alternatives have been considered in terms of achieving optimum protection of the ecosystem, improving scientific knowledge of the area, and promoting public understanding of the value of Olympic Coast resources. The following describes and analyzes the major alternatives considered in the evaluation process.

The fundamental choice is between two institutional alternatives: (1) no action, or continuing the status quo; and 2) the preferred alternative of sanctuary designation as a complementary measure to existing programs. Boundary, management, and regulatory options for the Sanctuary are evaluated within the sanctuary designation alternative.

I. Section: Boundary Alternatives

A. Introduction

Figure 53 shows the study area of the Olympic Coast National Marine Sanctuary considered in both the DEIS/MP released in July, 1991 and as modified in this FEIS/MP. The study area generally follows the 100 fathom isobath at the edge of the continental shelf, extending from the U.S./Canada international boundary to the mouth of the Columbia River. The boundary of the study area, as proposed in the DEIS/MP, extended into the Strait of Juan de Fuca to a line drawn due north from Koitlah Point to the international border. The study area proposed in this FEIS/MP extends to a line drawn due north from Observatory Point to the international border. The landward boundary proposed in the DEIS/MP extended to the mean higher high water line, up rivers and streams to the point of tidal influence, except when adjacent to Indian Reservations in which case the boundary was at the mean lower low tide line, cutting across the mouths of any rivers. Harbors were excluded and estuaries included in the study area. The landward boundary of the study area has been modified to be at the lower low water line when adjacent to State lands. The boundary remains at the lower low water line when adjacent to Tribal lands, and at the mean higher high water line when adjacent to lands under the jurisdiction of the NPS or the USFWS. The study area has been further modified to cut across the mouths of all rivers and streams. Grays Harbor and Willapa Bay are not included within the study area since NOAA's National Estuarine Research Reserve System (NERRS) or EPA's National Estuary Program (EPA) would be better tailored to meet the needs of these estuarine habitats.

The most significant amendment to the DEIS/MP was the addition of the Strait of Juan de Fuca in the study area of the

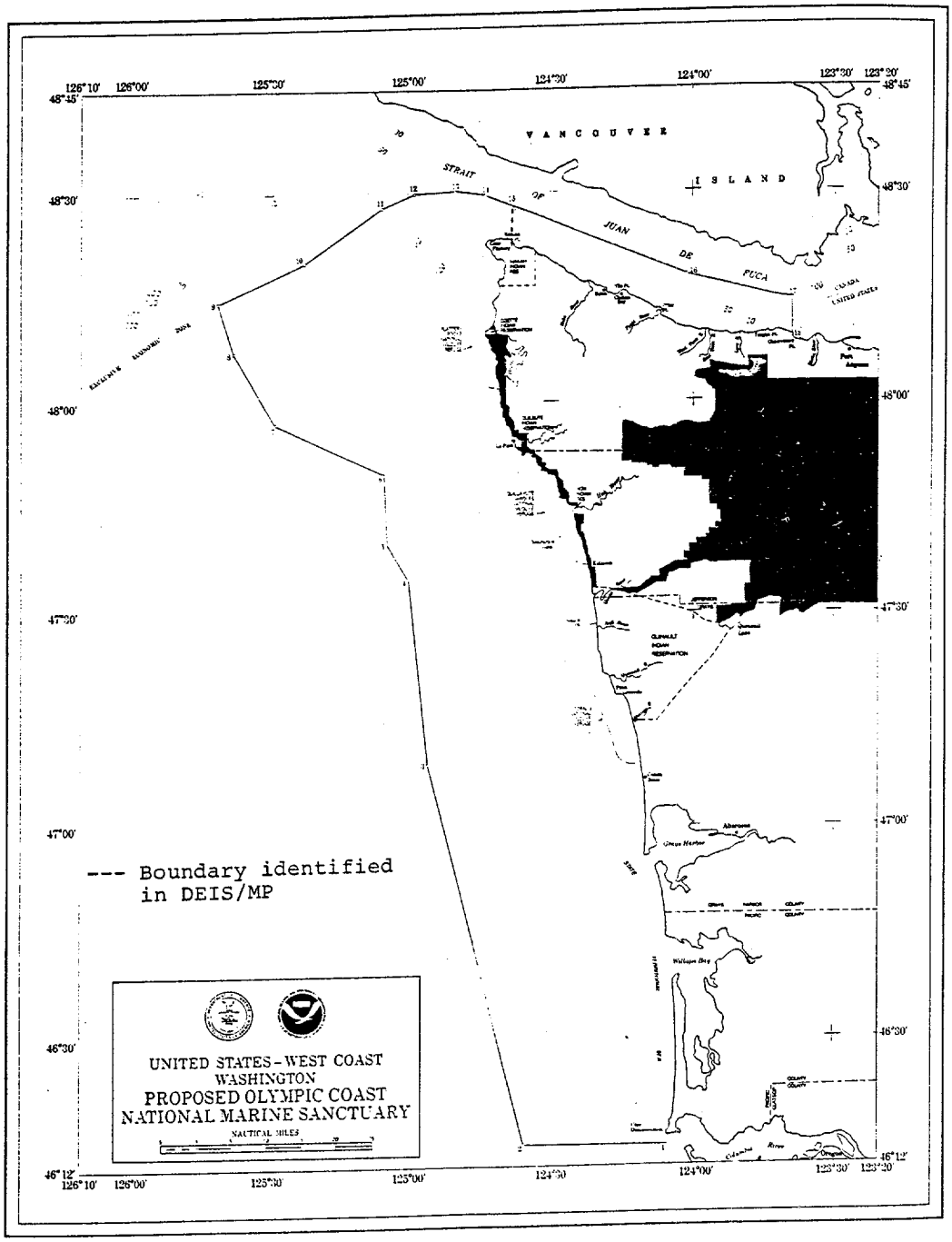

Figure 53. Study area Proposed in the DEIS/MP and FEIS/MP.

Olympic Coast National Marine Sanctuary. The inclusion of the Strait to Observatory Point resulted from comments on the DEIS/MP and an analysis of resources and uses occurring in the Strait. NOAA has analyzed, but rejected, the Strait of Juan de Fuca as part of the preferred alternative because: 1) the public has not had an adequate opportunity to comment on the addition of the Strait in the preferred alternative; and 2) further analysis considering the Strait for Sanctuary status will be included in the DEIS/MP for the proposed Northwest Straits National Marine Sanctuary. If, through the fulfillment of either of these processes, Washington State and NOAA agree that the Strait should be included within the boundaries of the Olympic Coast National Marine Sanctuary, the Sanctuary boundaries may be amended accordingly.

NOAA has developed five boundary options based upon an evaluation of several factors including: 1) the distribution of living resources and habitats; 2) geological, chemical, and physical oceanographic parameters; 3) human uses; 4) land use practices along the adjacent coastline; 5) prior site evaluations (e.g., NOAA's 1983 Site Evaluation List); and 6) management logistics. NOAA found during its analysis of these factors that it was useful to consider the entire study area as being subdivided into eight separate areas. Each area may be characterized by its living resources, human uses, or any other factors analyzed. NOAA's Strategic and Environmental Assessment Branch (currently referred to as the Strategic Assessment Branch (SAB) analyzed each subarea to determine its relative significance for selected invertebrates, fish, invertebrates, mammals, and seabirds with respect to the contiguous U.S. west coast (subarea 1a which encompasses the Strait of Juan de Fuca was not included in this analysis).

The scores are presented in Appendix C in a series of tables (Tables 3 through 9) that allow the reader to compare sub-areas according to selected assemblages of marine fauna. While these tables do not provide an exhaustive list of species for each subarea, they do exemplify the general biological profile of each region. The results of this analysis are used in developing and evaluating boundary options for the Sanctuary, as well as assessing the potential impacts of human activities occurring in the area.

Various combinations of these sub-areas result in the five boundary alternatives considered by NOAA. The resources and uses associated with each area are described in "Part II: Environmental Setting and Human Uses". Following is a description of the five boundary alternatives which are derived from various combinations of the sub-areas.

B. Boundary Alternative 1

1. Geographic Scope

This boundary alternative generally corresponds to the boundary of the "Western Washington Outer Coast" site described in NOAA's 1983 SEL (Figure 54). This alternative represents the smallest area that would be considered for sanctuary status, encompassing approximately 315 nm^2 (1,082 km^2). It extends seaward from Koitlah Point to the edge of Washington State waters (3 nautical miles from shore) south from Koitlah Point to Point Grenville. This boundary alternative includes the nearshore coastal waters adjacent to Olympic National Park, and surrounding the Quillayute Needles, Flattery Rocks, and Copalis National Wildlife Refuges and Wilderness Areas.

2. Distinguishing Characteristics

This boundary alternative includes significant intertidal and subtidal resources around Tatoosh Island and Cape Flattery, and birds and mammals which depend on the offshore rocks and islands. Over 60% of the colonial seabirds in Washington use the offshore islands and coastal cliffs in this region as nesting areas. This boundary, however, excludes the important seabird foraging areas. The boundary alternative encompasses significant habitat for several species of marine mammals including the sea otter, California sea lion, northern elephant seal, harbor seal, killer whale, gray whale, Right whale, Dall's porpoise, and the endangered Stellar sealion. Most of the sport fishery areas for salmon and groundfish, a portion of the razor clam beds, concentrations of giant octopus, spot shrimp, and fat gapers, and some of the commercial crabbing areas are included within this boundary option.

Recreational fishing, clamming, kayaking, beach hiking, and nature viewing are the major human uses which are conducted within this sanctuary boundary option. Vessel transits within this boundary are primarily from ships traversing the northwest corner of the boundary when entering the Strait of Juan de Fuca from the south, and tugs and barges traversing within three nautical miles of the coast. The planning area for former Lease Sale #132 does not include the area within three nautical miles of the coastline, and Washington State has placed a five year moratorium on oil and gas activities occurring within state waters (Washington State House Bill No. 2242, Section 9).

C. Boundary Alternative 2

1. Geographic Scope

Boundary alternative 2 is essentially an expansion of the first alternative to the 50 fathom isobath, encompassing approximately 1100 nm^2 (3,770 km^2), and extending seaward from 7 to 19 nautical miles from the coastline (Figure 55).

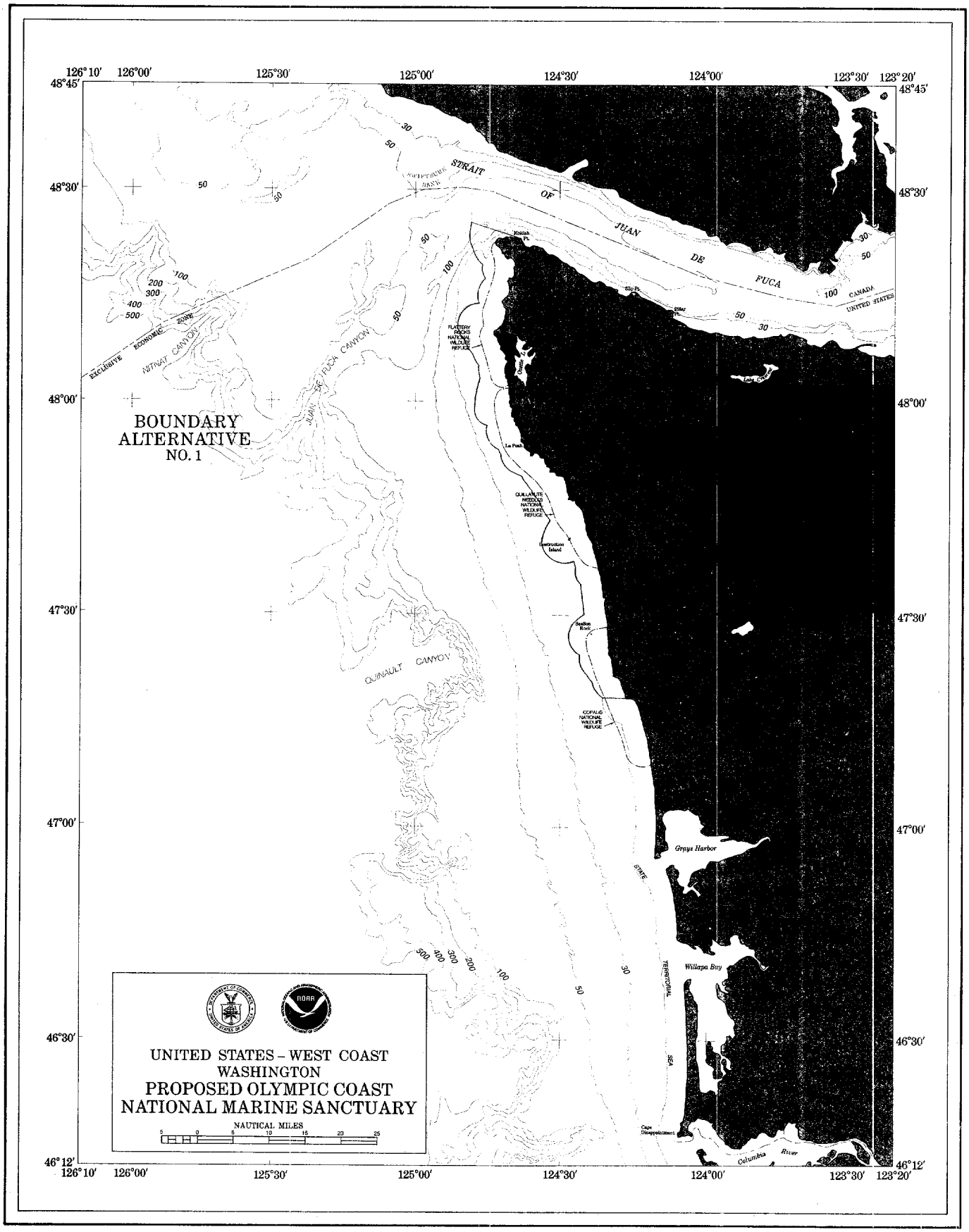

Figure 54. Boundary Alternative 1.

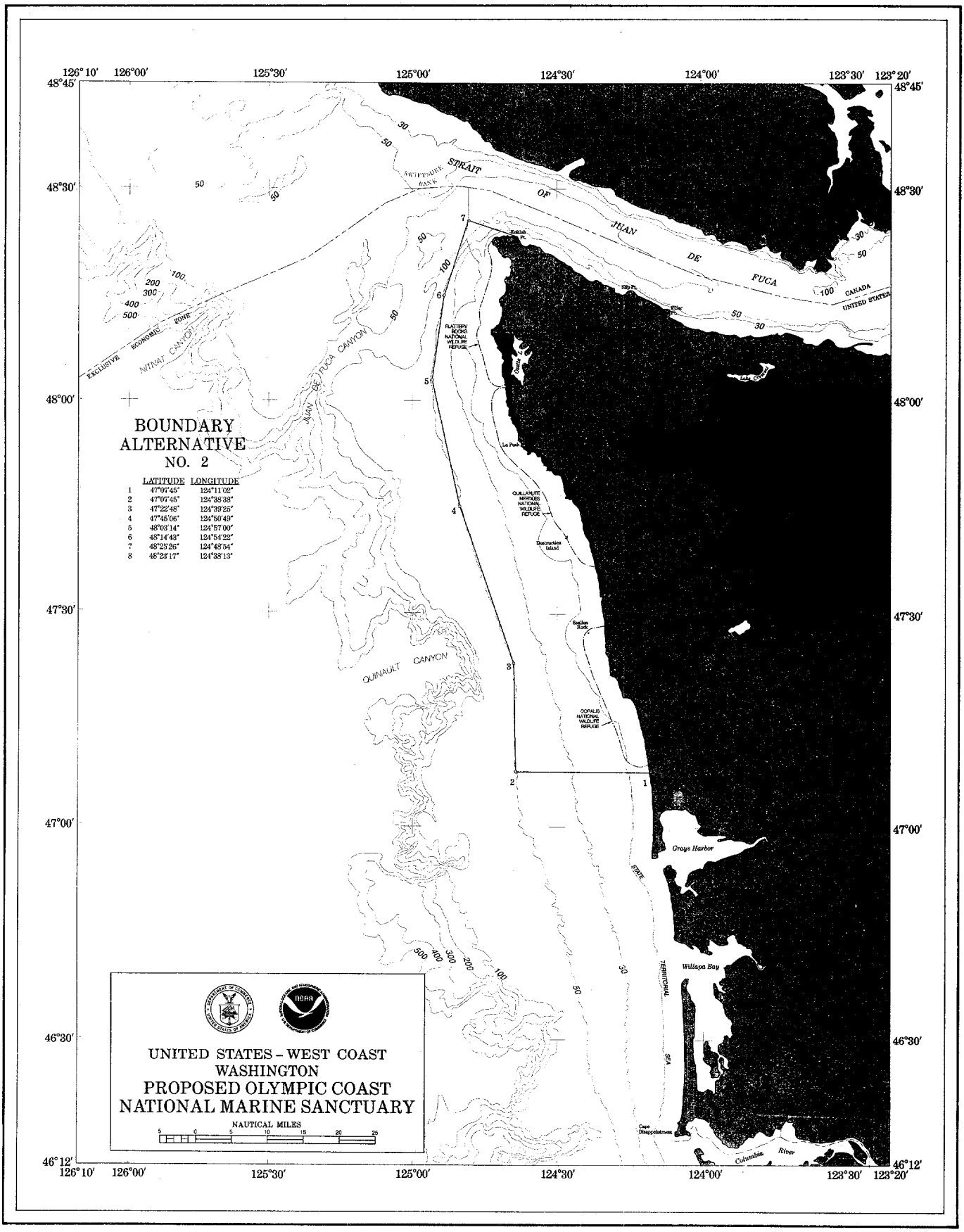

Figure 55. Boundary Alternative 2.

2. Distinguishing Characteristics

This seaward extension encompasses not only the large concentrations of marine resources near the coastline and offshore islands, sea stacks, and rocks, but also incorporates the commercial crab fishing grounds, migration routes for Gray whales and juvenile salmonids, and a large portion of the important commercial groundfish, salmon, and pink shrimp fishing grounds. It is estimated that only 5% of the potential hydrocarbon resources in the Sanctuary study area (or 1% of the total resources in the entire former Lease Sale #132) would be located within this boundary alternative (Martin, 1990). This boundary would encompass most of the routes transited by barge traffic and foreign product carriers.

This boundary alternative encompasses more of the important foraging habitat for colonial seabirds and pinnipeds using the offshore Islands than does boundary alternative 1. However, the boundary does not extend seaward to the edge of the continental shelf which is the generally recognized geographic range of significant foraging habitat.

D. Boundary Alternative 3

1. Geographic Scope

Boundary alternative 3 represents an extension of the first two alternatives seaward to the edge of the continental shelf (100 fathom isobath), including the heads of submarine canyons which incise the shelf, and establishes a sanctuary area of approximately 1,805 nm^2 (6,182 km^2) (Figure 56).

2. Distinguishing Characteristics

The resulting area is a homogeneous and clearly identifiable Sanctuary linking the nearly pristine, rugged, rocky coastal ecosystem with the nutrient rich offshore waters. The boundary includes areas of intensified upwelling occurring along the edge of the continental shelf, especially at heads of submarine canyons. The upwelling of nutrient enriched bottom waters result in increased biological productivity, especially when combined with periods of high solar radiation.

This boundary alternative, however, does not include the Juan de Fuca Canyon, nor the shallow banks bordering the northwest edge of the canyon known as Swiftsure bank and "the Plains.". These areas are extremely productive areas and support intensive commercial salmon and groundfishing and millions of foraging seabirds.

Many species of marine birds and mammals forage along upwelling fronts which occur along the edge of the shelf. The area over the outer edge of the shelf included in this boundary

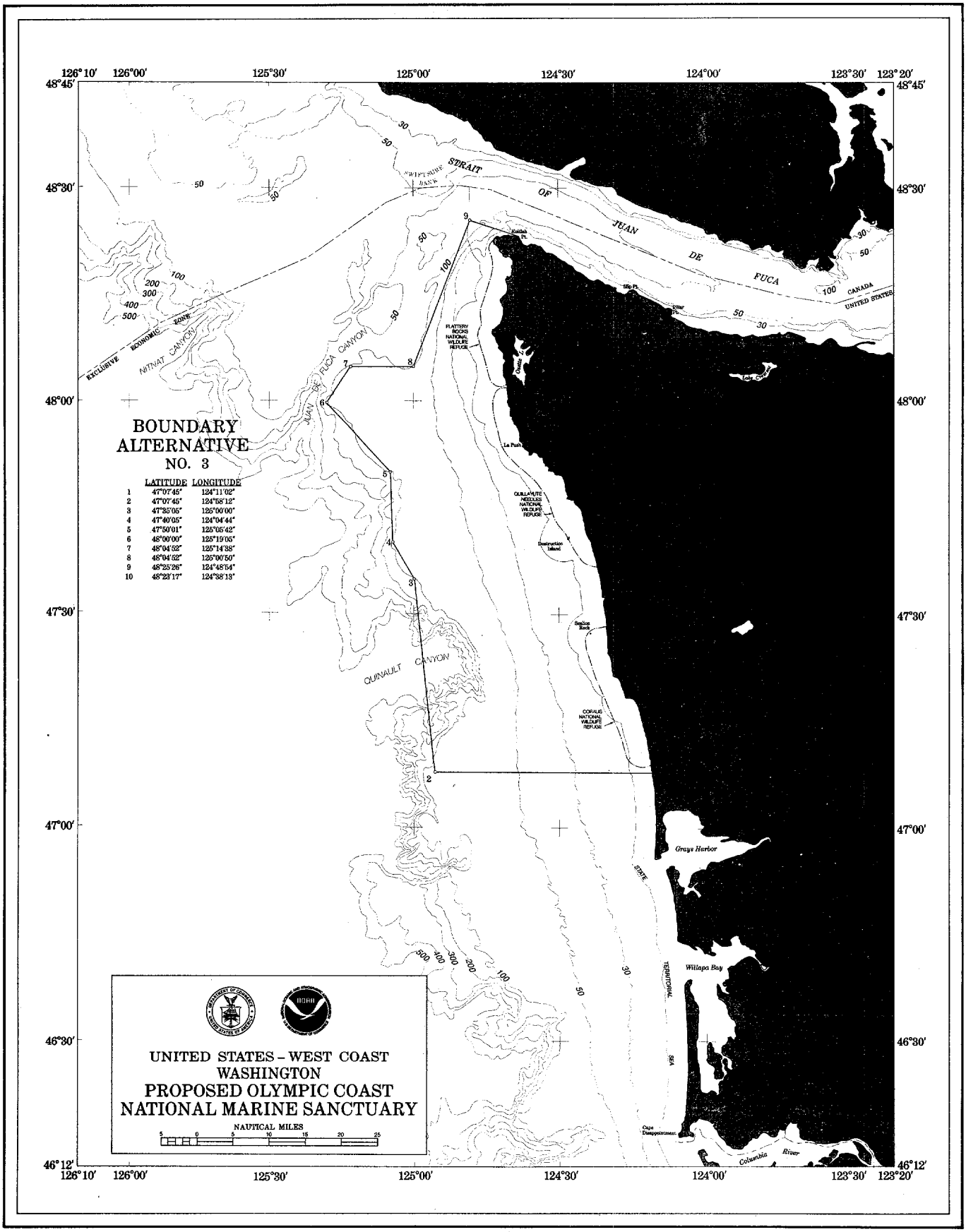

Figure 56. Boundary Alternative 3.

option is significant to pink shrimp, several seabirds (e.g., northern fulmar, black-legged kittiwake, common murre, and rhinoceros auklet), and several species of fish (e.g., spiny dogfish, steelhead, Pacific cod, walleye pollock, Pacific Ocean perch, widow rockfish, sablefish, lingcod, Pacific halibut, English sole, flathead sole, Petrale sole, Dover sole, and arrowtooth flounder) and mammals (e.g., northern sea lion, California sea lion, northern elephant seal, killer whale, Pacific white-sid dolphin, Baird's beaked whale, gray whale, Right whale, fin whale, Risso's whale and Dall's porpoise). Approximately 17% of the potential hydrocarbon resources of the Sanctuary study area (or 3.5% of the former Lease Sale #132) are estimated to lie within this boundary alternative.

E. Boundary Alternative 4 (Preferred)

1. Geographic Scope

Boundary alternative 4 encompasses the areas described in boundary alternatives 1-3 with the addition of the head of Juan de Fuca Canyon and the relatively shallow banks (50-80 fathoms) surrounding the submarine canyon and the Strait of Juan de Fuca. This area extends seaward approximately 35-40 nautical miles from the shoreline. Boundary alternative 4 as proposed in the DEIS/MP extends into the Strait to Koitlah Point, approximatley five miles from the entrance of the Strait. This original alternative focused completely on open ocean environments. The surface area of this alternative with a boundary at Koitlah Point is approximately 2,500 nm^2 (8,577 km^2). Various modifications to the easternmost boundary in the Strait of Juan de Fuca are examined including establishing the boundary slightly east of Pillar Point, Low Point, and Observatory Point (Figure 57). These alternative boundaries in the Strait encompass the tranisitional environment from a marine to an estuarine ecosystem.

a. Pillar Point (Pyscht River Estuary)

Pillar Point is the easternmost point of the headland just east of Neah Bay. It is located approximately 20 miles into the Strait and concentrates most of the energy from the open ocean waves entering the Strait. At the base of Pillar Point, the Pyscht River enters the Strait of Juan de Fuca forming the most extensive estuary and largest saltmarsh in the Strait. There is access to the saltmarsh and a small park supported by the WDNR along the banks of the Strait. A boat ramp provides access to the Strait. This alternative excludes the prolific kelp beds that lie off the Lyre and Twin rivers and the extensive subtidal rocky habitat between Pillar Point and Observatory Point. With this extension into the Strait, the area encompassed by boundary alternative 4A is approximately 2,635 sq. nautical miles (9,029 sq. kilometers).

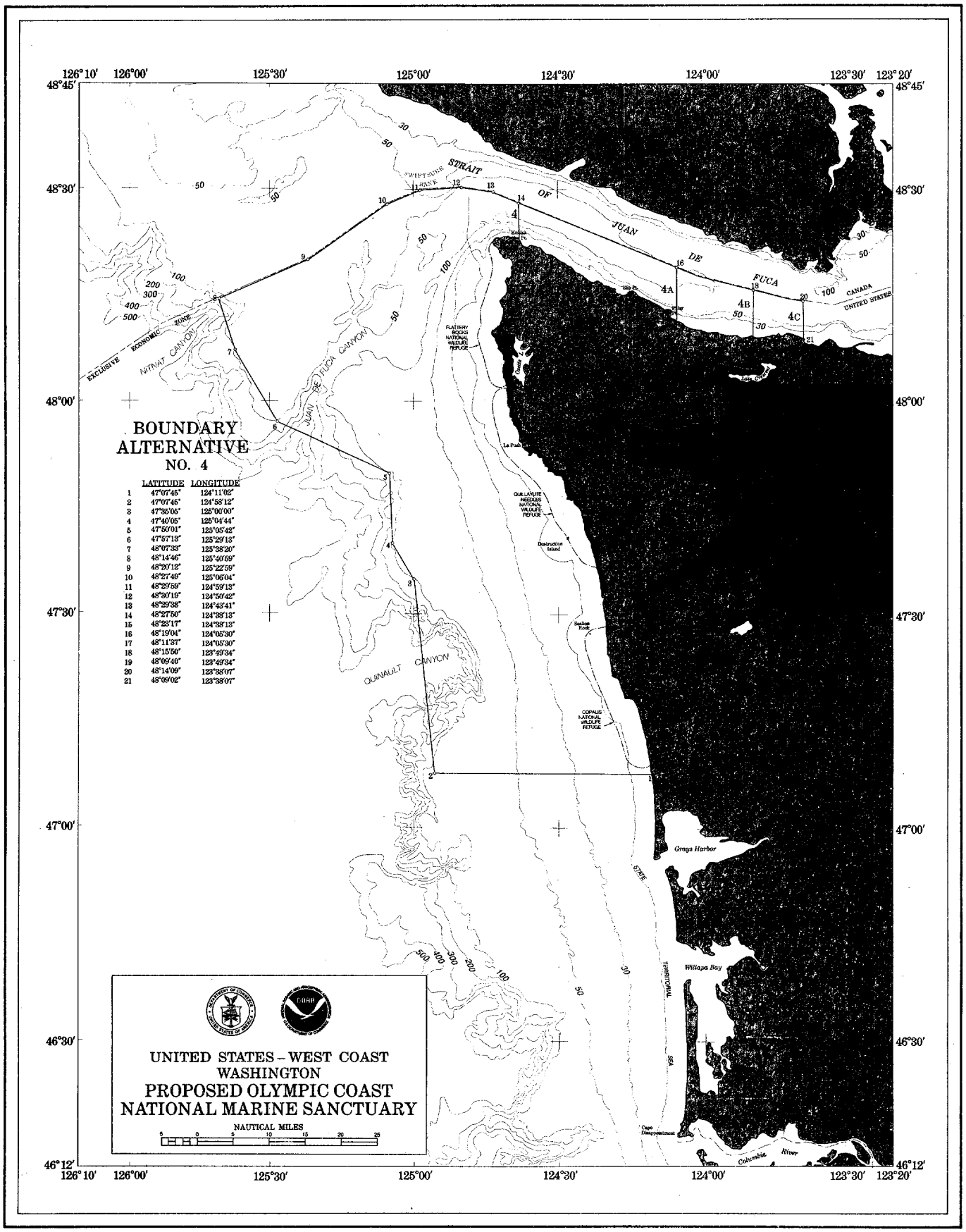

Figure 57. Boundary Alternative 4 with Alternative Boundaries.

b. Low Point

The macrocystis kelp beds off the Lyre River are the densest kelp beds in the Strait of Juan de Fuca. Inclusion of this area would encompass some of the most significant kelp beds in the Pacific Northwest. This boundary extends to the head of the Juan de Fuca Canyon although the effects of canyon upwelling extend the entire length of the Strait. This boundary alternative excludes the extent of subtidal rocky habitat and the historic shipwreck that lies between Low Point and Observatory Point. With this extension into the Strait, the area encompassed by boundary alternative 4B is approximately 2,710 sq. nautical miles (9,293 sq. kilometers).

There is a park supported by the WDNR at the mouth of the Lyre River which is included in this alternative. There are remarkable intertidal habitats along this stretch of the Strait supporting, among others, shorebirds, bald eagles, and colonies of cormorants.

c. Observatory Point

This boundary extends eastward to Observatory Point, located approximately 60 miles into the Strait. The boundary includes the easternmost extent of the functioning community representative of open ocean environments, characterized by macrocystis kelp beds, green anemone, gooseneck barnacles and California mussels. These organisms cease to exist eastward of Observatory Point as a functioning community indicating that Observatory Point represents the inland extent of the transition from open ocean to estuarine environments. Observatory Point is the eastern point on the most inland headland on the Strait of Juan. With this extension into the Strait, boundary alternative 4C encompasses 2,750 sq. nautical miles (9,434 sq. kilometers).

There is a county park at Tongue and Observatory Point. These Clallam County parks are well developed with picnic areas and boat ramps. The ramps are utilized by recreational SCUBA Divers, among others, who dive at the wreck of an historic ship wreck located in approximately 130 feet of water off Tongue Point. The subtidal rocky and kelp habitats of the entire Strait provide exceptional environments for recreational SCUBA Divers.

2. Distinguishing Characteristics of Boundary Alternative 4 Including the Strait of Juan de Fuca to Observatory Point

Oceanographic conditions, including the upwelling of nutrient-rich water at the head of Juan de Fuca Canyon, result in enhanced biological productivity over "the plains" and Swiftsure banks which are considered by local fishermen to be extremely productive groundfish and salmon fishing areas. The Strait also

serves as a transit and migration corridor for marine birds, mammals and ocean organisms entering from the outer coast. Up to 300,000 common murres may enter northern Puget Sound in any given year during the molting season. Since molting birds are mostly flightless, they use the Strait to swim to their overwintering grounds. Changes in biota, geology, and topography all seem to coalesce between Crescent Rock and Observatory Point.

The Pyscht River estuary and saltmarsh support one of the richest juvenile salmon habitats in the Strait. Further, the kelp habitats in the Strait, particularly off the Lyre and Twin Rivers are some of the densest and most diverse in the Pacific Northwest.

This alternative includes about 25% of the estimated potential hydrocarbons in the Sanctuary study area (or 5% predicted to be in formerLease Sale #132). The Strait is a corridor for fishing vessels and larger product carriers and tank vessels entering and exiting Puget Sound. There is a very well coordinated Vessel Traffic System established in the Strait and its approaches which is operated by the U.S. and Canadian Coast Guards. Radar coverage from Tofino Coast Guard Station covers all waters north of approximately Cape Alava and seaward 60 nautical miles.

F. Boundary Alternative 5

1. Geographic Scope

Boundary alternative 5 includes the entire sanctuary study area, encompassing approximately 4,155 nm^2 (14,249 km^2) (Figure 58). This alternative essentially spans the entire coastline and continental shelf of Washington State. This alternative expands upon the preferred alternative to include the large area (approximately 1,655 nm^2, or 5,672 km^2) south of Copalis National Wildlife Refuge extending seaward to the edge of the continental shelf, and south to the mouth of the Columbia River.

2. Distinguishing Characteristics

This southern area is characterized by a coastal geomorphology that is clearly distinct from the area to the north. The shoreline consists of sandy beaches and estuaries (Grays Harbor, Willapa Bay) in contrast to the northern rugged, rocky coastline with high bluffs, pocket beaches, and rock islands. Land use in the southern area is more heavily developed than in the nearly pristine northern area. Living resources include oyster beds in the estuarine areas, razor clams along the sandy beaches, pink shrimp and Dungeness crab fishing areas, Gray whale migration routes, and commercial, tribal, and sport fishing areas for numerous finfish species (including the major sport salmon fishing areas). The coastal waters lying adjacent to Grays Harbor and Willapa Bay are enriched by these extremely

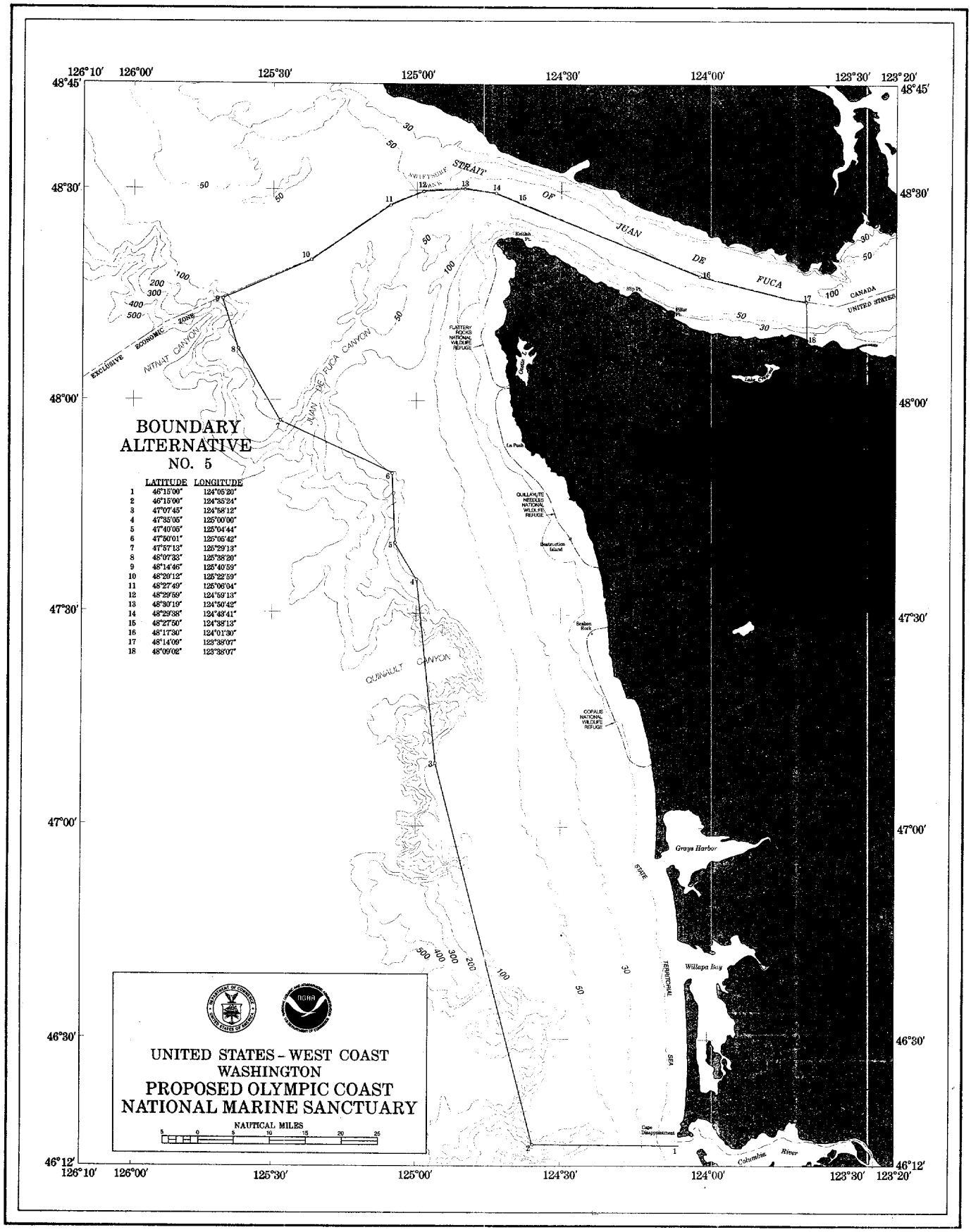

Figure 58. Boundary Alternative 5.

productive estuarine environments. Estuaries are important breeding grounds for numerous species of aquatic plants and animals and provide food for these plants and animals either directly or indirectly through a complex food web.

It is estimated by MMS that this area encompasses 20% of the potential hydrocarbon reserves in the entire former Lease Sale #132 (MMS, 1990a). Most of this hydrocarbon potential (15% of the total lease sale area) lies within the sedimentary basins south of Copalis National Wildlife Refuge which extend seaward from Grays Harbor and Willapa Bay estuaries.

II. Section: Regulatory Alternatives

A. Introduction

Regulatory alternatives governing different types of potential or current uses of the Sanctuary (oil, gas and mineral activities; discharges and deposits; moving, removing or injury of historical resources; alteration of, or construction on, the seabed; taking of marine mammals, turtles and seabirds; overflights; and vessel traffic; and fishing, kelp harvesting and aquaculture) were evaluated in terms of need and effectiveness for resource protection.

In formulating the sanctuary regulatory regime, NOAA analyzed the study area with respect to: 1) the resources and human activities; 2) the existing regulatory regime with regard to protection of the resources and qualities from possible harmful human activities; 3) proposed alternative regulatory regimes, including relying on the existing regulatory regime, to protect the sanctuary's resources and qualities; 4) the environmental consequences of each regulatory alternative on sanctuary resources, including no additional regulatory action; and 5) proposed regulations based on the preferred course of action deemed necessary to protect Sanctuary resources and qualities.

The choice of proposed regulations is based on environmental consequences of each action and constraints set by the MPRSA, which states in Section 304(c):

(1) Nothing in this title shall be construed as terminating or granting to the Secretary the right to terminate any valid lease, permit, license, or right of subsistence use or of access if the lease, permit, license, or right-

(A) was in existence on the date of enactment of the Marine Sanctuary Amendments of 1992, with respect to any national marine sanctuary designated before that date; or

(B) is in existence on the date of designation of any national marine sanctuary, with respect to any national marine sanctuary designated after the date of enactment of the Marine Sanctuaries Amendments of 1992.

(2) The exercise of a lease, permit, license, or right is subject to regulation by the Secretary consistent with the purpose for which the sanctuary is designated.

The prohibitions set forth in the Sanctuary regulations would not apply to (see the regulations themselves for the exact provisions):

1) Any activity authorized by any valid lease, permit, license, approval, or other authorization in existence on the effective date of Sanctuary designation and issued by any Federal, State, local or tribal authority of competent jurisdiction, or by any valid right of subsistence use or access in existence on the effective date of Sanctuary designation, provided that the holder of such authorization or right complies with sanctuary regulations regarding the certification of such authorizations and rights (e.g., notifies the Secretary or designee of the existence of, requests certification of, and provides requested information regarding such authorization or right) and complies with any terms and conditions on the exercise of such authorization or right imposed as a condition of certification by the Secretary or designee as he or she deems necessary to achieve the purposes for which the Sanctuary was designated.

Pending final agency action on the certification request, such holder may exercise such authorization or right without being in violation of any prohibitions set forth in the Sanctuary regulations, provided the holder is in compliance with sanctuary regulations regarding certifications.

2) Any activity authorized by any valid lease, permit, license, approval or other authorization issued after the effective date of Sanctuary designation by any Federal, State or local authority of competent jurisdiction, provided that the applicant complies with Sanctuary regulations regarding notification and review of applications (e.g., notifies the Secretary or designee of information regarding the application), the Secretary or designee notifies the applicant and authorizing agency that he or she does not object to issuance of the authorization, and the applicant complies with any terms and conditions the Secretary or designee deems necessary to protect Sanctuary resources and qualities. Amendments, renewals and extensions of authorizations in existence on the effective date of Sanctuary designation constitute authorizations issued after the effective date.

The authority granted the Director to object to or impose terms or conditions on the exercise of any valid lease, permit, license, approval or other authorization issued after the effective date of Sanctuary designation may not be delegated or otherwise assigned to other Federal official below his or her

level.

3) Any activity conducted in accordance with the scope, purpose, terms, and conditions of a National Marine Sanctuary permit issued by the Secretary or his or her designee in accordance with the Sanctuary regulations. Such permits may only be issued if the Secretary or designee finds that the activity for which the permit is applied will have only negligible, short-term adverse effects on Sanctuary resources and qualities and will: further research related to Sanctuary resources; further the educational, natural or historical resource value of the Sanctuary; further salvage or recovery operations in or near the Sanctuary in connection with a recent air or marine casualty; assist in managing the Sanctuary; or further salvage or recovery operations in connection with an abandoned shipwreck in the Sanctuary title to which is held by the State of Washington.

4) Any activity conducted in accordance with the scope, purpose, terms, and conditions of a Special Use permit issued by the Secretary or designee in accordance with Sec. 310 of the Act.

When the preferred Sanctuary action is to rely on the status quo to govern the activity either by including the activity in the scope of regulations by not regulating with designation (i.e. kelp harvesting, aquaculture and vessel traffic), or by excluding the activity from the scope or regulations entirely (i.e., fishing), the activity would continue to be subject to regulations of other authorities.

5) Any activity necessary to respond to emergencies threatening life, property or the environment.

6) With regard to Department of Defense activities: All Department of Defense activities shall be carried out in a manner that avoids to the maximum extent practicable any adverse impacts on Sanctuary resources and qualities. The prohibitions in paragraphs (a)(2)-(9) of § 925.5 of the regulations do not apply to existing military activities carried out by the Department of Defense, as specifically identified in this FEIS/MP for the proposed Olympic Coast National Marine Sanctuary. New activities may be exempted from the prohibitions in paragraphs (a)(2)-(9) of that section by the Director of the Office of Ocean and Coastal Resource Management or designee after consultation between the Director or designee and the Department of Defense.

Notwithstanding the above, in no event under the Sanctuary regulations, would the Secretary or designee be allowed to issue a permit authorizing, or otherwise approve, (1) the exploration, development or production of oil, gas or minerals within the Sanctuary, (2) the discharge of primary-treated sewage within the Sanctuary (except for certification, pursuant to section 925.10 of valid authorizations in existence on the effective date of

Sanctuary designation and issued by other authorities of competent jurisdiction), or (3) the disposal of dredge material within the Sanctuary. Any purported authorizations issued by other authorities after the effective date of Sanctuary designation for any of these activities within the Sanctuary would be invalid.

Each type of activity proposed to be regulated by the Sanctuary is stated below and described in terms of its impact to resources and uses. The status quo is also given in terms of existing laws, regulations and their impacts to the resources and uses of the waters off the Olympic Peninsula.

B. Oil, Gas and Mineral Activities

1. Status Quo

a. Existing Regulatory Framework

Pursuant to the 1992 reauthorization of the MPRSA (P.L. 102-587), no oil or gas leasing or pre-leasing activity shall be conducted within the area designated as the Olympic Coast National Marine Sanctuary. Thus, the preferred alternative regarding the regulation of oil and gas activities has been statutorily mandated.

b. Impact to Resources

The existing regulatory framework protects the Sanctuary resources from the harmful effects of oil and gas activities. It has been concluded that many uncertainties regarding potential impacts from OCS activities still exist, even in marine areas for which there is far more information than for the Olympic Coast (NAS, 1989; EPA, 1985; and NAS, 1985). However, some potential risks to the Olympic Coast from OCS oil and gas activities, and the transportation of hydrocarbon products can be evaluated.

Offshore hydrocarbon exploration, development, and production activities, including the transshipment of crude oil to the mainland, may cause unforeseen and potentially substantial discharges of oil, both chronic and catastrophic, into the marine environment. The sensitive marine resources of the Olympic Coast may be threatened by: (1) well "blow-outs" caused by equipment failure or damage, or geologic hazards; (2) oil spills and pipeline leaks; (3) noise and visual disturbances caused by drilling, the presence of drill rigs or platforms, work crews, supply boats, and helicopters; (4) pollution associated with aquatic discharges; and (5) short-term pipeline construction upheaval. The impacts of oil and gas on the coastal and offshore environment may be intensified because of the remoteness of the area. There are very few access points along the coast. Further, most of the coastline is characterized by rocky intertidal habitat which, when impacted by oil and gas, does not recover for many years.

Normal hydrocarbon operations can result in unintentional, chronic, or small oil spillage. Since the Olympic Coast area has had little history of hydrocarbon production, direct evidence does not exist to illustrate the effects of exploration, development, and production spills in these waters. Petroleum products are, however, transported along the coast and through the Strait of Juan de Fuca. Two oil spills, one from the General M.C. Meiggs and the other from the Nestucca, have occurred recently in coastal waters off Washington State. Oil spilled from the barge Nestucca oiled beaches found within the boundary of the Sanctuary. The reports of damages from these incidents, as well as data from spills in other marine waters, serve as examples of the types of impacts that can result from oil related accidents. Known threats to marine organisms that may result from offshore oil and gas exploration, development, and production are presented in Table 6.

OCS oil and gas activities that would take place offshore in Federal waters can negatively effect state territorial waters and coastal environments. In addition to affecting marine organisms, these activities can disrupt human uses of the marine environment and the socioeconomic structure of coastal communities (MMS, 1990). Potential negative impacts to nearshore and coastal areas include: the presence of processing facilities which also involves problems of air pollution and disposal of processing wastes; interference with port operations and stress on existing port facility space and services; conflict with shore-based operations which use offshore waters (e.g., commercial and recreational fishing, whale-watching operations); and socioeconomic impacts on affected coastal communities (Mead and Sorenson, 1970; Cican-Sain, 1985; Freeman, 1985, MMS, 1990).

Further, the activities associated with oil and gas exploration and development would introduce into the viewshed of the Olympic Peninsula an interference with what is known and valued as a nearly pristine undeveloped coastline. This value is what makes the Olympic Peninsula aesthetically one of the most magnificent natural environments remaining in the continental U.S.

c. Impact to Uses

The status quo prevents offshore development of the outer continental shelf within the Sanctuary and the introduction of 1-2 offshore platforms into the area for the first time. Associated with this direct development would be numerous indirect increases in human activities such as increase in vessel traffic, either servicing the platforms or transporting oil (unless pipelines are used to offload the discovered resources), increases in overflights from helicopters, increasing levels of discharges, and increased urban development. Prevention of this development will have a positive impact on fishing, and

Table 6. Known Threats to Marine Organisms from Oil and Gas Exploration and Development.

Activity/Facility	Chronic Hazard	Episodic/Catastrophic Events
Exploration		
Seismic Profiling	Noise, "startle effect"	Sub-surface noise, Concussion
Drilling		Siltation, Turbidity increase
Boat Traffic	Sub-surface noise and propeller hits	
Operation		
Offshore facilities		
Platforms	Intrusion	
Well head	Leakage/seepage	Blow-out
Support		
Supply boats	Sub-surface noise and propeller hits	
Aircraft	Noise in the air	
Transport		
Pipelines	Leakage	Rupture
Pumping buoys	Leakage	
Barges/Tankers	Bilge oil intrusion	Collision or grounding
Clean-up		
Oil on water	Intrusion	
Skimmers		
Burn-off		Pollution--air
Chemicals	Toxicity of Chemical	Pollution--water
Grounded oil		Pollution--sediments
Booms	Dispersants	Disturbance to sensitive bird and mammal populations on beaches by human intrusion and aircraft activity
Straw		
Chemicals		
Presence of crew and equipment		Habitat destruction

recreational and tourist activities in the area.

Exploration and development of oil, gas and mineral resources involves extensive study of the offshore ecology and geology. These studies will need to be undertaken by other institutions.

2. Sanctuary Alternative

a. Sanctuary Action (Preferred Alternative)

Exploring for, developing or producing oil, gas or minerals within the Sanctuary is prohibited.

b. Impact to Resources

The resources and qualities of the Sanctuary, particularly the sea otters, pinnipeds and seabirds, kelp forests, rocky shores and offshore islands, and the high water quality of the area, are especially vulnerable to oil and gas activities. Only partial protection would be provided due to the remaining threat from potential oil and gas development outside of the Sanctuary boundary and from vessel traffic, particularly oil tankers, transiting through and near the Sanctuary. However, NOAA is working with the Coast Guard to address the threats from vessel traffic. A prohibition on oil and gas activities within the proposed Sanctuary is consistent with the prohibition on alteration of, or construction on, the seabed as discussed below.

The prohibition will prevent activities in the Sanctuary which could result in discharges associated with petroleum and other mineral development potentially harmful to wildlife (including many endangered species) in the area. This alternative adds further protection than P.L 102-587 by prohibiting mineral development (e.g., sand and gravel development) which can have detrimental impacts to the benthic and aquatic environments.

c. Impact to Uses

There is presently no oil and gas development taking place in the study area. Lease Sale #132 has been canceled and no additional Lease Sale activity is proposed through the year 2000. The Sanctuary prohibition will eliminate all potential future direct and indirect oil, gas and mineral activities in the area. Activities such as tourism and fishing should benefit by the prohibition.

C. Discharges or Deposits

1. Status Quo

a. Existing Regulatory Framework

Numerous laws and regulations administered by many local,

state and Federal agencies exist governing the contamination of coastal and ocean waters by discharges and deposits from a variety of sources including point and non-point source discharges, discharges of oil and hazardous substances (e.g., oil from vessel bilges and toxic chemicals), overboard trash disposal (e.g., discarded fishing nets and plastic trash), and ocean dumping of dredge material.

The primary Federal, state and local laws, policies and plans governing discharges include but are not limited to: the Federal Water Pollution Control Act (the "Clean Water Act", CWA); Title I of the MPRSA; the Coastal Zone Management Act; the Rivers and Harbors Act; the Act to Prevent Pollution from Ships, (which implements MARPOL 73/78, Annexes I and II); the Marine Plastic Pollution Research and Control Act (MPPRCA) (which amends the Act to Prevent Pollution from Ships and implements Annex V of MARPOL 73/78); the Oil Pollution Act of 1990 (OPA 90); the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (which, together with section 311 of the CWA, provides for the National Contingency Plan); EPA's Administrative Regulations; the Washington State Forest Practices Act (FPA) (RCW Chapter 76.09) (which addresses the environmental impacts of forestry on the coastal zone); and the State Water Pollution Control Act of 1973 (RCW Chapter 90.48) which implements the Federal Water Pollution Control Act at the state level (Many of these authorities are discussed in more detail in Appendix I).

Responsible agencies for implementing appropriate regulations and plans include, but are not limited to, the NOAA, the EPA, COE, USCG, WDOE, and WDNR.

i. Point Source Discharges

NPDES permits are required by all municipal and industrial dischargers that discharge pollutants from a point source into navigable waters of the U.S., the waters of the contiguous zone, or ocean waters. The WDOE is responsible for the protection of the quality of the state's waters through the development of water quality control plans and the issuance of waste discharge permits. The coastal tribes receive their NPDES permits directly from EPA and do not network through the State agency.

The State of Washington is also responsible for ensuring that dischargers of water pollutants comply with the conditions of the issued NPDES permits. Thus, the WDOE works with EPA in a program commonly referred to as the "Compliance Assurance Program." Pursuant to an MOA between EPA and WDOE, each agency's policies and responsibilities directed to enforcing effluent limitations and compliance schedules for NPDES were delineated. The MOA sets forth the manner and extent to which the program elements of inspections, tracking, enforcement, and evaluation are carried out.

ii. Non-Point Source Discharges

EPA has provided Washington State guidance on implementing the provisions of EPA's Anti-degradation Policy (40 CFR 131.12) which is applicable to non-point source pollution as well as point source pollution. Specifically, "where high quality waters constitute an outstanding National resource, such as waters of National and State Parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected" (40 CFR 131.12 (a)(3)). The non-point source provisions of the CWA 205(j), 208, 303(e) and 319 are subject to the anti-degradation policy and EPA is developing additional guidance in this area.

Washington State manages non-point source pollution through the FPA. The WDNR is the state agency with primary responsibility to implement the Act. The FPA declares that it is in the public interest for public and private commercial forest lands to be managed consistent with sound policies of natural resource protection and that coincident with the maintenance of a viable forest products industry, it is important to afford protection to forest soils, fisheries, wildlife, water quantity and quality, air quality, recreation, and scenic beauty.

The FPA created the Forest Practices Board to adopt rules and regulations governing the details of forest practices management consistent with the provisions of the Act and the Forest Practices Advisory Committee. The Advisory Committee appointed two regional advisory committees to recommend region-specific rules and regulations.

The FPA establishes a permit process governing forest practices on private and public forest lands in the state, except on Federal lands. The FPA gave counties in which forest practices are proposed a significant role in the process. DNR may not approve portions of applications concerning conversion to another use to which counties object, though the Department may appeal the county's objection to the Forest Practices Appeals Board which was created by FPA to hear such disputes. Both Clallam and Jefferson Counties have waived their right to review forest practices not involving conversion to another use under the FPA in an effort to streamline the process.

In terms of coastal zone management, the FPA supersedes the Shoreline Management Act in some cases. FPA specifies that in relation to "shorelines", the forest practice regulations to be adopted by the Forest Practices Board "...shall be the sole rules applicable to the performance of forest practices, and enforcement thereof shall be solely as provided..." in the FPA. It is further stipulated that no substantial development permit "...shall be required under chapter 90.58 RCW for the construction of up to five hundred feet of one... road or segment

of a road provided such road does not enter the shoreline more than once," and except under unusual conditions. And finally, FPA provides that "[a]ny powers granted by chapter 90.58 RCW pertaining to forest practices...are expressly limited to lands located within 'shorelines of the state' as defined in RCW 90.58.030. DNR and DOE (for water quality) are empowered to make an inspection after any forest practice.

iii. Hazardous waste, oil and trash disposal

Discharges of oil and hazardous substances are regulated under the CWA, OPA 90 and CERCLA, with discharges by seagoing ships of oil, oily mixtures and noxious liquid substances also regulated under the Act to Prevent Pollution from Ships. The CWA and CERCLA provide for the National Contingency Plan (40 CFR Part 300), under which the Coast Guard serves as the lead agency for responding to discharges of oil and hazardous substances.

Discharges by ships of plastics and other garbage is regulated under MARPOL by the USCG (regulations appear at 33 § CFR 151.51 to 151.77.

iv Ocean Dumping

The COE has permitting authority, with EPA review and approval, over dumping of dredged material in waters lying seaward of the baseline from which the territorial sea is measured pursuant to Title I, section 103 of the MPRSA. COE also issues permits for discharge of dredged material into navigable waters in internal waters pursuant to section 404 of the CWA. EPA has permitting authority for ocean dumping of materials other than dredged materials pursuant to Title I, section 102 of the MPRSA.

The regulations under Title I of the MPRSA provide for special recognition of nationally significant marine areas, such as marine sanctuaries established pursuant to Title III of the MPRSA.

b. Impact to Resources

Although water quality off the Olympic Peninsula is considered to be good, there is evidence of potential water quality problems in limited parts of the Sanctuary. There is also pressure to develop the coastline of the sanctuary. Faced with severe economic hardships and limited development alternatives, the populations in the coastal watersheds are seeking ways to diversify their timber-based economies. This includes plans to expand harbors, build casinos, restaurants, hotels and other recreational facilities as well as promote eco-tourism. With this development comes the associated need for dredging and dredge disposal activities, and expanded point and

non-point source pollution.

Further, there are some efforts to manage non-point source pollution from upland uses in portions of coastal watershed pursuant to the FPA. However, there is little associated coastal monitoring of the health of the kelp and eel grass beds of the Strait and coastal areas to assess the effectiveness of the management initiatives. There also lacks sediment standards for streams entering the proposed sanctuary.

Ocean dumping, municipal outfalls, and dredged material disposal can smother benthic biota and introduce substances into the marine environment, which may affect fish, bird, mammal, and algae resources. In addition to reducing overall water quality and lessening the aesthetic appeal of the area, the discharge of litter may harm marine mammals that sometimes ingest or become entangled in such litter.

Thus, under the existing regulatory regime, the coastal ecosystem will continue to receive little attention due to the multi-jurisdictional nature of the coastal watersheds, the low priority assigned to it by state and Federal agencies due to its remoteness and assumed pristine quality, and the immediate need for economic development. Management efforts will continue in a piece-meal fashion with no coordinated comprehensive planning and regulatory watershed initiatives.

c. Impact to Uses

The status quo alternative would continue to provide for increasing development in the watersheds adjacent to the Sanctuary with no overall plan to minimize the impacts on the coastal ecosystem. Although the population is expected to grow very slowly, efforts are underway to diversify the economy and attract increased tourism to the coast.

2. Sanctuary Alternative (Preferred)

a. Sanctuary Action

Discharging or depositing, from within the boundary of the Sanctuary, any material or other matter is prohibited except:

(i) fish, fish parts, chumming materials or bait used in or resulting from traditional fishing operations in the Sanctuary;
(ii) biodegradable effluent incidental to vessel use and generated by marine sanitation devices approved in accordance with Section 312 of the Federal Water Pollution Control Act, as amended, (FWPCA) 33 U.S.C. 1322 et seq.;
(iii) water generated by routine vessel operations (e.g., cooling water, deck wash down and graywater as defined by Section 312 of the FWPCA) excluding oily wastes from bilge

pumping;
(iv) engine exhaust;

Discharging or depositing, from beyond the boundary of the Sanctuary, any material or other matter that subsequently enters the Sanctuary and injures a Sanctuary resource or quality is prohibited except those listed in (i-iv) above.

b. Impact to Resources

The intent of this prohibition is to protect the Sanctuary resources and qualities from the harmful effects of land and sea-generated point and non-point source pollution, such as, but not limited to, trash and oil disposal by vessels and pollutant loading from adjacent land use practices.

By maintaining the high water quality of the ecosystem off the Olympic Peninsula, the organisms responsible for primary productivity at the base of the food chain, the coastal wetlands and estuarine habitats will be protected from the direct effects of pollutant loadings. Benthic biota will be protected especially from smothering and turbidity increases from the dumping of dredge material. Fish, seabirds, turtles, and marine mammals will be protected from direct negative impacts such as entanglement in discarded trash and infection from degraded water quality, and will benefit from the indirect effects of protected habitats and enhanced prey abundance.

c. Impact to Uses

Overall, the impact of this regulation on human uses as well as the Sanctuary resources and qualities is expected to be beneficial. No existing human uses will be terminated with designation and in the long-term, many activities such as fishing and tourism will continue to benefit from the maintenance of the high water quality of the area.

In accordance with section 304(c)(1) of the MPRSA, 16 U.S.C. 1434(c)(1), NOAA may regulate existing permits through certification which may include imposition of terms and conditions consistent with the purposes for which the Sanctuary is designated. Permits issued after the date of designation are subject to a review process which may include added terms and conditions or objection to issuance, as necessary to protect Sanctuary resources and qualities. Any application for an amendment, renewal or extension to an existing permit is considered a new permit in which case NOAA must approve of the issuance of the permit.

NOAA will work within the existing process, rather than create an entirely new regulatory review and approval procedure, governing discharge activities in the Sanctuary and coastal

watersheds. NOAA intends to minimize any additional administrative burden on those dischargers that are required to obtain a NPDES permit for discharges that affect, or may affect the Sanctuary, while at the same time, ensure that the existing process addresses the special concerns of the Sanctuary and it's resources and qualities. In addition, a close working relationship between the Sanctuary and existing authorities and affected users will necessitate the identification and exchange of information relevant to the maintenance of the area's high water quality, and the protection and conservation of resources and qualities of the Sanctuary.

Consistent with the MPRSA primary objective of protecting the Sanctuary and its resources, (Section 301(b)(5) of the MPRSA, 16 U.S.C. § 1431(b)(5)), the Sanctuary regulations address discharges within the Sanctuary boundary (15 CFR 925.5(a)(2)) as well as those discharges outside of the Sanctuary boundary that enter and injure Sanctuary resources and qualities (15 CFR 925(a)(3)).

Specific impacts to uses of the area that involve discharge into the Sanctuary are discussed in more detail below.

i. Vessels

The impact of this regulation on vessel operations is expected to be minor. Oil discharges are presently regulated under, e.g., the CWA, OPA 90 and MARPOL. The disposal of non-biodegradable and other potentially harmful trash is already regulated by MARPOL. The exemptions from this regulation are designed to allow continued use of the Sanctuary by vessels that do not appear to threaten Sanctuary resources and qualities. Thus, fish, fish parts, chumming materials and bait used in, or resulting from, traditional fishing operations within the Sanctuary (exhaust, vessel cooling waters, and approved marine sanitation wastes) are specifically exempted from the prohibition.

ii. Dredge Disposal Activities

There are no dredge disposal activities occurring in, or near the Sanctuary at the time of designation. The regulation would prohibit the designation and use of any new dredged material disposal sites within the Sanctuary. Dredge disposal activities outside the boundaries of the Sanctuary that enter and injure Sanctuary resources and qualities are prohibited.

iii. Point Source Discharges

There are no point-source discharges entering directly into the Sanctuary. Discharges and deposits from point sources entering indirectly into the Sanctuary, pursuant to any valid

permit existing on the effective date of these regulations, are allowed subject to all prohibitions, restrictions and conditions validly imposed by any other authority of competent jurisdiction, provided, however, that NOAA may regulate the exercise of these existing permits as necessary to achieve the purposes for which the Sanctuary was designated.

In consultation with scientific institutions and local, State, Tribal and Federal governments, NOAA will consult with the permittees and the relevant permitting authorities to determine means of achieving the Sanctuary purposes. If additional constraints are necessary, NOAA will work with the permittees and permitting authorities to determine the necessary level of terms and conditions to provide adequate protection of the Sanctuary's resources and qualities.

The requirement of NOAA certification of existing permits for, e.g., municipal and industrial sewage, will ensure NOAA consideration of potential impacts on Sanctuary resources and qualities.

New proposals for permits, licenses, or other authorizations after the effective date of Sanctuary designation, e.g., allowing the discharge of municipal and industrial sewage would be subject to Sanctuary review to ensure that Sanctuary resources and qualities are protected from injury.

When existing permits are submitted for renewal, they would be reviewed as a new permit. NOAA will evaluate the activity to determine whether there would be any negative effects to water quality or resources, whether the permittee has complied with permit standards, and, if necessary, decreased discharges and/or increased treatment standards due to the presence of the Sanctuary.

This regulation could thus result in additional costs to existing and future dischargers if the Sanctuary were to determine that a higher level of treatment or other, more expensive disposal methods were preferable in order to ensure Sanctuary resources and qualities are protected. The requirement of Sanctuary certification or approval of permits for point source dischargers will ensure that these potentially harmful activities receive special consideration from the Sanctuary's perspective.

iv. Non-Point Source Discharges

Land-based non-point source discharges within watersheds adjacent to the Sanctuary that drain into the Sanctuary will be monitored to ensure the activity is consistent with the goals of the Sanctuary and that Sanctuary resources and qualities are protected. If evidence arises that Sanctuary resources and

qualities are threatened, NOAA intends to work with existing regulatory agencies and responsible parties to determine appropriate measures to prevent the threat of injury to Sanctuary resources and qualities.

D. Historical Resources

1. Status Quo

a. Existing Regulatory Framework

Under this alternative any historical resources (as defined by Sanctuary Program and Sanctuary regulations to include, inter alia, archeological, paleontological, or cultural resources) will remain subject to the existing management regime. The existing Federal regulatory regime includes the National Historic Preservation Act of 1966 (NHPA), 16 U.S.C. 470 et seq., the Archeological and Historical Preservation Act of 1974, 16 U.S.C. 469 et seq., the Abandoned Shipwreck Act (ASA) of 1987, 43 U.S.C. 2101 et seq., and the Archeological Resources Protection Act of 1979 (ARPA), 16 U.S.C. 470aa et seq. Permits are issued by the State Office of Archeology and Historic Preservation, within the WDCD, for those historic resources in State waters pursuant to the State Historical Societies-Heritage Council-Archeology and Historic Preservation Act (Chapter 25-48 WAC and Title 27 RCW).

Before any archeological excavation of a site of tribal significance, the State Office of Archeology and Historic Preservation consults with the Tribe regarding mitigation measures to be incorporated into the permit. Title 43 CFR Part 7 of the ARPA requires that before issuing a permit a Federal land manager shall provide notice to the interested tribes, and within a 30-day period discuss tribal interests, including ways to avoid or mitigate potential harm or destruction such as excluding sites from the permit area. Such agreed upon mitigation measures shall be incorporated into the terms of the permit. The Federal land manager may enter into agreements with an Indian tribe to determine locations for which the tribe wishes to receive notice of permits.

Within the framework of the status quo, any historical resources known to be within the proposed sanctuary, especially those that are on the National Register listing under the NHPA, will be carefully monitored by Sanctuary staff. In addition, any activity that could lead to the discovery of historical resources will be carefully monitored. The Sanctuary manager will try to ensure that adequate information is available regarding the national significance of these resources and appropriate management measures are in place.

b. Impact to Resources

Existing regulatory authorities provide some protection for underwater historical resources in the Sanctuary. Guidelines

published by the NPS assist the states and Federal agencies in developing legislation and regulations to carry out their management responsibilities regarding shipwrecks in accordance with the provisions of the ASA.

The NHPA mandates that Federal agencies consult with the Advisory Council on Historic Preservation before engaging in any undertaking that could affect historic resources. Consultation with the expertise of this Council provides Federal agencies with an opportunity to ensure their proposed activities are technically adequate and that any plans to salvage historical resources take into account preservation requirements for the long-term protection of the resources.

Under the state permitting process, archeological and historical/cultural resources can be excavated and as much as 90% of the value of the salvaged objects may remain in private ownership. The State has priority in determining which of the 10% of the artifacts are to remain in the public domain. This regime provides the public access to the historical resources for educational or research purposes before being turned over to private ownership. Further, guidelines in permits granted to permitees ensure that the marine benthic environment is protected during salvage or research activities on historical resources within State waters pursuant to the State Environmental Protection Act (SEPA).

c. Impact to Uses

Salvage operations in State waters are subject to permits by the WDCD as described above. Salvors are required to obtain a permit after consulting with the coastal tribes (if excavations involved artifacts of tribal interest) and assessing the impacts to resources in the vicinity of the operation. The salvor may retain up to 90% of the value/artifacts salvaged following inspection by the State Archeologist. There is no coordination in policy for salvage operations occurring in State and Federal waters.

2. Sanctuary Alternative (Preferred)

a. Sanctuary Action

Moving, removing or injuring, or attempting to move, remove or injure, a Sanctuary historical resource is prohibited. This prohibition does not apply to moving, removing or injury resulting incidentally from traditional fishing operations.

b. Impact to Resources

Under this alternative, moving, removing or injuring or attempting to move, remove, or injure a Sanctuary historical

resources without NOAA approval will be prohibited (see the introduction to Part III). Sanctuary management of historical resources under the authority of the MPRSA shall be consistent, to the extent practicable, with the Federal archeological program by consulting the Uniform Regulations, ARPA (43 CFR Part 7), the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (48 CFR 44716, Sept. 29, 1983) and other relevant Federal regulations. NOAA also intends to work closely with the WDCD and the State Historic Preservation Office (SHPO) regarding approval to move or remove abandoned shipwrecks, title which is held by Washington State.

Management of historical and cultural resources of significance to the tribes will be managed so as to protect other Sanctuary resources and the interests of the governing body of an Indian tribe(s) in such historical resources. If an Indian tribe determines that a historical resource of tribal significance should be researched, excavated or salvaged, the Sanctuary manager may issue a Sanctuary permit if the criteria for issuance have been met. The terms and conditions of the permit will ensure that the Sanctuary program has access to artifacts and research results for education purposes and that the artifacts are placed in a location agreed upon by the interested Indian tribes.

This regulation is necessary in order to protect these valuable resources for research and interpretation. In addition, during its review of a request for a Sanctuary permit, NOAA would consider the impacts of the proposed activity on adjacent Sanctuary resources and qualities such as benthic communities and associated fish populations.

c. Impact to Uses

Human activities that "take" a historical resource would require Sanctuary approval (however, see exception in regulation for certain fishery activities). Such approval would only be given under specific circumstances such as for research or education purposes. Where this responsibility overlaps with other state and Federal agencies the Sanctuary would coordinate its review with the appropriate agency. Most archeological work being conducted is related to the culture and history of the coastal tribes. Shipwrecks that have occurred along the coast have disintegrated due to the high energy environment that characterizes the Pacific Northwest. As only a few uses "take" historical resources, the impact of this regulation on uses is expected to be minor.

E. Alteration of or Construction on the Seabed

1. Status Quo

a. Existing Regulatory Framework

The most relevant legislation pertaining to the alteration of, or construction on, the seabed includes Section 10 of the Rivers and Harbors Act; Section 404 of the CWA; Title I of the MPRSA; the Submerged Lands Act; the Outer Continental Shelf Lands Act; and the Washington State Submerged Lands Act.

The primary Federal agencies affected include, but are not limited to, the COE and EPA. The WDNR is the primary state agency.

b. Impact to Resources

Under this alternative, the benthic resources and the various substrates of the Sanctuary will continue to be protected by the existing management regime and existing state and Federal regulations governing activities on the seabed will still apply. There will be no special consideration of the seabed as an environment that provides a variety of habitats that, in turn, support the rich colonies of kelp and other algae, benthic invertebrates and associated organisms dependent upon these habitat assemblages.

Activities such as sand and gravel mining and dredge disposal may cause loss of sediment and associated disruptions in benthic, kelp and algae communities from erosion of habitat and smothering of organisms from increased turbidity and particle deposition. The benthic communities off the northern Olympic Peninsula are rich feeding grounds for marine mammals and seabirds and development activities could seriously interfere with marine mammal and seabird ecology.

c. Impact to Uses

Harbor maintenance activities are predicted to increase, particularly at Neah Bay and La Push including dredging. The alternatives for dredge disposal sites may include ocean disposal. There is also interest in mining gravel deposits off of Cape Flattery which may result in loss of fish habitat and fishing grounds. These activities may diminish the ecological and aesthetic value of the Sanctuary.

2. Sanctuary Alternative (Preferred)

a. Sanctuary Action

Drilling into, dredging or otherwise altering the seabed of the Sanctuary; or constructing, placing or abandoning any structure, material or other matter on the seabed of the Sanctuary, is prohibited except as an incidental result of:

(i) Anchoring vessels;
(ii) Traditional fishing operations;
(iii) Installation of navigation aids;
(iv) Harbor maintenance in the areas necessarily associated with Federal projects in existence on the effective date of Sanctuary designation, including dredging of entrance channels and repair, replacement or rehabilitation of breakwaters and jetties; or
(v) Construction, repair, replacement or rehabilitation of docks or piers.

b. Impact to Resources

The intent of this prohibition is to protect the resources and qualities of the Sanctuary from the harmful effects of activities such as, but not limited to, archeological excavations, drilling into the seabed, strip mining, laying of pipelines and outfalls, ocean mineral extraction (including but not limited to sand mining), and dumping of dredge spoils and offshore commercial development that may disrupt and/or destroy sensitive marine benthic habitats.

c. Impact to Uses

New activities, for example, development of new breakwaters, new applications or requests for offshore commercial development projects such as, but not limited to, placement of artificial reefs, gravel mining and dredge disposal would be prohibited. No new dredge disposal sites will be allowed within the Sanctuary.

Since harbors are excluded from the Sanctuary boundary, all harbor activities within the exclusion zones would be excluded from the scope of regulations. The construction of new docks and boat ramps in the Sanctuary will require NOAA approval.

F. Taking Marine Mammals, Turtles, and Seabirds

1. Status Quo

a. Existing Management Regime

The MMPA, ESA, and the MBTA are the principal Federal authorities, and the Wildlife Code (RCW 77), the Fisheries Code (RCW 75), and the Hydraulic Code (RCW 75.20) are the Washington State authorities for the protection and conservation of marine wildlife. Agencies involved in the administration of these measures include the NMFS, the USFWS, WDF, and WDW.

b. Impact to Resources

Under this alternative the MMPA and the ESA would provide protection to the marine mammals, turtles and seabirds of the Sanctuary--both prohibit the taking of specific species protected under those Acts. Taking is defined as meaning: 1) for any sea

turtle, marine mammal or seabird listed as either endangered or threatened pursuant to the Endangered Species Act, to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect or injure, or to attempt to engage in any such conduct; and 2) for any other sea turtle, marine mammal or seabird, the term means to harass, hunt, capture, kill, collect or injure, or to attempt to engage in any such conduct.

The MBTA codifies a series of conventions between the U.S. and Great Britain, Mexico, Japan and the states that comprised the former USSR providing protection of the migratory birds, and their nests and eggs from taking, killing, possessing, selling and other specified forms of exploitation. Such acts are allowed only via permits (regarding marine mammals except sea otters, see the discussion of fishing for information on the five year incidental take exemption for commercial fishermen established by the 1988 amendments to the MMPA due to expire in October of 1993). These resources will continue to be protected on a species basis but not under the special purview of the Sanctuary management regime which provides the authority to manage uses for the protection of the ecosystem.

c. Impact to Uses

All users of the Sanctuary are prohibited from taking any marine mammal or endangered or threatened seabirds and turtles unless in possession of a permit. For instance, incidental taking of an endangered species in the course of fishing is prohibited except under special circumstances. All taking of migratory birds is prohibited by the MBTA without a permit, and permits are not granted for taking in the course of fishing.

2. Sanctuary Alternative (Preferred)

a. Sanctuary Action

Taking any marine mammal, turtle or seabird in or above the Sanctuary is prohibited, except as authorized by the National Marine Fisheries Service or the United States Fish and Wildlife Service under the authority of the Marine Mammal Protection Act, as amended, (MMPA), 16 U.S.C. 1361 et seq., the Endangered Species Act, as amended (ESA), 16 U.S.C. 1531 et seq., and the Migratory Bird Treaty Act, as amended, (MBTA), 16 U.S.C. 703 et seq., or pursuant to any treaty with an Indian tribe to which the United States is a party, provided that the treaty right is exercised in accordance with the MMPA, ESA and MBTA.

Taking is defined as meaning: 1) for any sea turtle, marine mammal or seabird listed as either endangered or threatened pursuant to the Endangered Species Act, to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect or injure, or to attempt to engage in any such conduct; and 2)

for any other sea turtle, marine mammal or seabird, the term means to harass, hunt, capture, kill, collect or injure, or to attempt to engage in any such conduct.

b. Impact to Resources

The proposed prohibition would overlap with the MMPA, MBTA and ESA but strengthen protection by imposing Sanctuary fines for violations of the provisions of the Acts. This regulation includes all marine mammals, sea turtles, and seabirds in or above the Sanctuary.

This regulation would not affect any users other than those already regulated. However, upon violation of this Sanctuary regulation the MPRSA (Section 307) allows NOAA to assess civil penalties as high as $100,000 for each violation. The status quo sets maximum sanctions as follows: The MBTA sets maximum criminal fines at either $500 or $2,000 per violation, depending on the violation. The MMPA sets maximum civil penalties at $10,000 and maximum criminal penalties at $20,000. The ESA sets maximum civil penalties at $500, $12,000, or $25,000 per violation, depending on the violation and maximum criminal fines at $50,000 (the statutes also provide for imprisonment for criminal violations). Thus this Sanctuary regulation may further deter violations. In addition, since civil penalties received for violation of Sanctuary regulations go back into the Marine Sanctuary Program, more directed efforts can be implemented to protect these valuable natural resources.

c. Impact to Uses

As indicated above, this regulation will not affect any uses other than those already regulated which include fishing, whale watching, overflights and commercial development that may take marine mammals, seabirds or turtles.

G. Overflights

1. Status Quo

a. Existing Regulatory Framework

Overflights are regulated by the Federal Aviation Administration (FAA). Current FAA regulations specify minimum altitudes over open water, unpopulated and populated areas which are codified in 14 CFR Parts 91-95. The only restrictions for aircraft flying over the Sanctuary are minimum altitudes of 500 feet from any person, vessel, vehicle or structure. Helicopters may be operated less than 500 feet from the ground if the operation is conducted without hazard to persons or property on the surface. Each person operating a helicopter must comply with any routes or altitudes specifically prescribed for helicopters by the Administrator of the FAA. The FAA has established a 2000 ft. advisory for aircraft flying over National Parks, Wildlife

Refuges and Wilderness Areas.

Thus, all aircraft flying over the Sanctuary can legally fly unrestricted. When there are military operations within the MOA's over the Peninsula, non-military airplanes stay below 1200 ft. Most aircraft that land at airports on the Peninsula (Sekiu, Quileute, Copalis) are small recreational airtaxi or commuter planes.

b. Impact To Resources

Compared to areas around more congested population centers, the air traffic patterns above the Sanctuary are light. However, the minimum altitude requirements do not prevent aircraft from disturbing the marine mammal, pinniped and particularly sensitive seabird colonies of the Sanctuary. Low level overflights of ecologically sensitive coastal areas are know to cause disturbance and even fatalities of marine wildlife. Nesting colonial seabirds are especially vulnerable to noise disturbance from overflights in that a startle reaction may result in egg destruction, or vulnerability of chicks to prey. Migrating and foraging cetaceans are also known to change their behavior patterns when approached by aircraft flying at low levels.

c. Impact To Uses

Under the status quo, recreational and commuter aircraft will continue to fly over the Peninsula and the Sanctuary. There will be no regulations of overflights that protect the ecologically sensitive habitats of the Sanctuary.

2. Sanctuary Alternative (Preferred)

a. Sanctuary Action

Flying motorized aircraft at less than 2,000 feet above the Sanctuary and within one nautical mile of the Flattery Rocks, Quillayute Needles, or Copalis National Wildlife Refuges or at less than 2,000 feet above the Sanctuary within one nautical mile seaward from the coastal boundary of the Sanctuary is prohibited, except as necessary for valid law enforcement purposes, for activities related to tribal timber operations conducted on reservation lands, or to transport persons or supplies to or from reservation lands as authorized by a governing body of an Indian tribe.

b. Impact to Resources

The prohibition on overflights below 2000 feet (610 m) is designed to limit potential noise impacts, particularly those that might startle hauled-out seals and sea lions, sea otters or birds nesting along the shoreline margins of the Sanctuary. Intrusive overflights during sensitive biological periods will

therefore be minimized. The 2000 foot minimum was chosen to be consistent with the already existing FAA advisory over the National Park and Wildlife Refuge areas adjacent to the Sanctuary.

c. Impact to Uses

Overflights over the Sanctuary within one nautical mile seaward of the offshore islands and the coastal boundary will be required to remain at least 2000 ft. above ground level. Exceptions will be allowed, if necessary, to respond to an emergency threatening life, property, or the environment, landings or takeoffs from Copalis, Quileute, or Sekiu airports, or for valid law enforcement purposes. Further, tribal operations that involve overflights to facilitate access to tribal lands are exempt from the regulation pursuant to treaty rights of access to reservation lands.

H. Vessel Traffic

1. Status Quo

a. Existing Regulatory Regime (Preferred)

NOAA does not propose to promulgate vessel traffic regulations. Vessel traffic, however, will be placed in the scope of regulations. This preferred alternative, to give NOAA the authority to regulate vessel traffic in the future, but to work within the existing management framework with designation, will enable NOAA to work with the USCG, Washington State OMS, and WDOE on appropriate action to protect the resources of the Sanctuary.

The principal legislation and conventions governing vessel traffic include: OPA 90 (P.L. 101-380); MARPOL 73/78 and its Annexes I, II, and V; Ports and Waterways Safety Act; International Convention to Prevent Collisions at Sea; and the Washington State Oil and Hazardous Substance Spill Prevention and Response Act (RCW 90.56, RCW 43.21I, and RCW 88.46). The responsible agencies are the USCG, Canadian Coast Guard, IMO, Washington State OMS, and WDOE (Appendix I). The resource assessment discusses the roles and authorities of each agency in greater depth.

There is a CVTMS in the Strait of Juan de Fuca with designated inbound and outbound lanes on the U.S. and Canadian sides of the international border, respectively. No vessel greater than 125,000 dead weight tons may pass east of Port Angeles and all tankers passing into Puget Sound must be accompanied by a pilot and one (and soon to be two) escort tugs.

Outside of the Strait of Juan de Fuca there are voluntary agreements by maritime associations to coordinate the movement of coastwise tanker traffic and tank barge traffic. Under these

agreements, tankers transiting along the coast remain at least 50 nautical miles from shore unless entering a port of call. Barges follow agreed upon lanes within 5 and 10 miles from shore pursuant to the crabber-tugboat agreements negotiated yearly. The future of these agreed upon lanes, however, is uncertain.

There are no tugs specifically dedicated for emergency response in Puget Sound, the Strait of Juan de Fuca or Grays Harbor. There have been a number of near misses when vessels have lost power either off the coast or in the Straits. Likewise, there have been collisions off the Strait of Juan de Fuca (Tenyo Maru in 1991) and barges punctured off the coast (Nestucca, 1988) which have resulted in oil spills. However, the Strait of Juan de Fuca Emergency Towing Vessel Task Force has been formed and is charged with the mission of establishing, maintaining, and operating an emergency towing vessel in the Strait of Juan de Fuca.

NOAA has been working closely with the USCG on recommendations to the IMO to designate an area from the shoreward boundary of the Sanctuary to 25 nautical miles off the outer coast as an Area to be Avoided (ATBA). This ATBA will ensure enough time, in the event of an engine failure aboard a vessel or other disabling accident, for a tug to intercept the possibly eastwardly drifting vessel during a worst-case storm before it grounds on the shoreline of the Sanctuary.

The USCG will recommend to the IMO in June, 1994 that an ATBA be established off the western Washington coast. ATBA's are areas within defined limits in which either navigation is particularly hazardous or in which it is exceptionally important to avoid casualties, and which should be avoided by all ships, or certain classes of ships (IMO, 1991). Should the request to establish an ATBA not be forwarded to the IMO, or not approved by the IMO, NOAA will reconsider it's options to address vessel traffic issues at that time.

The ATBA would, in effect, create a "buffer zone". This zone would provide sufficient time for response vessels to arrive on the scene of a maritime emergency. Additionally, creation of such a zone would provide time for emergency teams ashore to be notified, contingency plans to be activated, and should there be a spill, some weathering to occur which would reduce the risk of damage to the shoreline.

b. Impact to Resources

With the projected increase in the number of vessels approaching the Strait of Juan de Fuca, it is only a matter of time before the coast experiences another vessel related accident. Such an event, either collision or a grounding due to loss of power or steering control or human error, would likely

result in a spill of hazardous material. The rocky intertidal areas and the productive food chain off the Pacific coast are extremely sensitive to damage by oil or other pollutants. This is an area with little coastal access and most booms are ineffective during common winter storms.

c. Impact to Uses

Under the Status Quo, uses will be subject to the outcome of the contingency and response planning initiatives by Regional Marine Safety Committees of the OMS, WDOE and the USCG. There will continue to be no restriction on vessel traffic movement along the coast, and barges and foreign vessels will be able to transit as close to shore as they choose. However, OMS requires all vessels to comply with contingency and prevention plan requirements. If a spill occurs, as it has in the past, there will be serious consequences to the region. Spills interfere with subsistence gathering of intertidal biota, as well as treaty and non-treaty fisheries for salmon, groundfish, halibut, and shellfish. There are substantial impacts to shore birds, seabirds, and marine mammals. Tourism to the coast will also be affected.

The USCG and the OMS are studying various prevention and response proposals to increase marine safety in both inshore and offshore waters. Escort tugs for tanker traffic inside the Strait of Juan de Fuca, tanker free zones, contingency plans, etc., have all been considered and regulations have been implemented.

2. Sanctuary Alternative

a. Sanctuary Action

NOAA will regulate vessel traffic either by prohibiting all vessels, or vessels carrying hazardous substances, from transiting the Sanctuary, or by creating defined vessel traffic lanes for vessels to follow when transiting along the coast.

b. Impact to Resources

Sanctuary regulations would ensure that Sanctuary resources are protected from vessel related incidences occurring as a result of domestic vessel traffic. Regulations would likely apply to ships carrying hazardous cargo, appropriate distances from shore, contingency plans, and vessel and crew standards. However, Sanctuary regulations would have no applicability to foreign vessels.

c. Impact to Uses

A prohibition on vessel traffic within the Sanctuary, or the regulation of vessel traffic within the Sanctuary, can seriously

undermine the ongoing efforts to address vessel safety, cause undue economic hardship to a point where the costs outweigh the benefits, or increase the risk of collisions at sea. Further, another management layer will cause added confusion to an already complicated but well coordinated vessel management regime.

This is an alternative that highlights the delicate balance between too much and too little vessel traffic regulation. The entrance to the Strait is a highly congested area due to the presence of tankers, freighters, tugs and barges, and fishing vessels. Any regulations or management actions that further restrict vessel traffic on the approaches to the Strait, especially if promulgated by multiple authorities, will cause greater risk of an accident, especially given the multilingual profile of mariners entering the Strait.

A prohibition on vessel traffic, or establishment of specific lanes along the coast will also minimize the flexibility of barges to negotiate the area in various weather conditions. At a certain point, decreasing flexibility among mariners, and complicating the management regime increases the risk of an accident and consequent damage to Sanctuary resources.

I. Fishing, Kelp Harvesting, Aquaculture

1. Status Quo (Preferred)

a. Existing Regulatory Framework

Fishing and aquaculture are not listed in the scope of regulations. Principal fishing legislation and regulations include: Washington Fish and Game Code, Fishery Management Plans (FMP's) promulgated pursuant to the MFCMA (16 U.S.C. §§ 1801 et seq (Groundfish Management Plan, Salmon Management Plan), International Pacific-Salmon Treaty, and the International Halibut Treaty, and the Boldt Decision. The implementing authorities include the NMFS, the PFMC, the WDF, the WDNR, and the International Halibut Commission. (Appendix I). Kelp harvesting, however, is in the scope of regulations.

b. Impact to Resources

The fishery management regime is highly coordinated and extremely complex. The harvest of fish stocks are coordinated between Oregon, California, Alaska, Canada, and within Washington State, between treaty (among 23 tribes along the outer coast, Strait of Juan de Fuca and Puget Sound) and non-treaty fishers (sport and commercial). The management regime for salmon allocates harvest by fish originating from specific watersheds. Management coordinates hatchery production and monitors the status of the weakest natural runs originating from specific river systems.

Currently, there is no salmon or shellfish aquaculture

occurring within the Sanctuary. However, there are numerous tribal and state operated hatcheries that release salmon into streams entering the Sanctuary.

There is very limited kelp harvesting occurring within the Sanctuary. The Lummi and Klallam Tribes harvest small amounts of Kelp near Neah Bay for a limited herring-roe-on-kelp fishery. There is interest in commercially harvesting kelp in the Strait of Juan de Fuca and the WDNR is working on a kelp harvesting management plan. Sea grasses and kelp resources are under the jurisdiction of the WDNR.

Fishing activities in the Sanctuary are extensive in the Strait of Juan de Fuca and its approaches. Commercial and recreational salmon and halibut fishing occurs along the coast and in the approaches of the Strait. Sport fishing is concentrated around Neah Bay, Pillar Point at the mouth of the Pyscht River and off Freshwater Bay at Observatory Point. Salmon are harvested off the coast using the trolling method and in the Strait of Juan de Fuca by gillnets and purse seines. Halibut are harvested by hook and line. Significant halibut grounds are located in the Strait of Juan de Fuca. The halibut quota established by the International Halibut Commission is divided among treaty and non-treaty recreational fishers. Groundfish are harvested by trawling.

Invertebrates are harvested in the Strait of Juan de Fuca and along the outer coast in the intertidal and subtidal areas. Treaty members harvest barnacles, chitons, sea urchins, sea cucumbers and other invertebrates as part of their subsistence economies. Sea urchins are harvested by non-treaty commercial divers around Neah Bay and managed by WDF through rotation of beds. Sea cucumbers are harvested in the Strait in the commercial dive, limited beam trawl, and treaty subsistence fisheries. Sea cucumbers are also managed through the rotation of beds in the Strait of Juan de Fuca. Octopus are harvested from the Strait subtidally by recreational divers, tribal subsistence fishers and incidental to other dive fisheries. Harvests are only permitted if done by hand, or with instruments that do not penetrate the skin.

The FMP's are drafted by the PFMC. The FMP's establish catch limits for groundfish and specifies the duration of the fishing season and catch and size limits for salmon. Commercial fishing-gear restrictions are specified for both the groundfish and salmon fisheries. Trolling and trawling are the only permissible gear on the outer coast for salmon and groundfish and set nets, gill nets, trolling and purse seines are permissible in the Strait of Juan de Fuca for salmon, and trawling for groundfish. Research has shown that the impacts of these gears on the benthic communities is minimal since trawls are designed to be used on soft bottom habitats, and to roll over rocky

substrate. Pots are used to harvest crab.

The MFCMA provides for enforcement of FMP's prepared by the PFMC and approved by the Secretary of Commerce after review by the NMFS. Fishery regulations are enforced by the USCG, NMFS and WDF.

The 1988 Amendments to the MMPA established a five year exemption for commercial fishermen to take marine mammals (except sea otters) incidental to their fishing activities. Marine mammals, except sea otters, may be taken incidentally to commercial fishing pursuant to 16 U.S.C. § 1383a until October 1993, after which rulemaking pursuant to 16 U.S.C. §§ 1371, 1373, and 1374 may be required. The amendments require the NMFS to establish an exemption, observer, and reporting system to document incidental captures of marine mammals by fishermen that are expected to take marine mammals. Based on reports of the fishermen, the NMFS is to submit to Congress its recommendations to manage commercial fishing activities in a way that reduces adverse impacts to marine mammals. The interim exemptions will expire in October, 1993. NMFS, the fishing industry and environmental groups are currently developing a permanent management plan. The revised management plan will address the Makah Tribe's treaty right to hunt whales and marine mammals.

The taking of sea otters was specifically excluded from the five year interim incidental take exemption for commercial fishing operations. During the interim period, intentional lethal taking is prohibited for Alaskan sea otters (which is the stock off Washington) rather than a total prohibition (which only applies to southern (California) sea otters) (50 CFR 229.4(b)(2) and 50 CFR 229.6(c)(6)).

In general, fishing activity is extensively regulated to ensure continuous production of fish stocks for long-term harvest and to reduce potential conflict with marine mammals, seabirds, and the benthic communities.

c. Impact to Uses

Fishing in the Sanctuary would be regulated other than under the Sanctuary regulatory regime by Federal and state authorities of competent jurisdiction. ("Fishing regulation" means a regulations that is directed specifically at fishing activities or fishing vessels. This does not include a regulation that is applicable to all types of vessels or activities.)

Under the status quo fishing would continue without any additional regulation under the Sanctuary regulatory regime. As a result of other sanctuary regulations aimed at improving water quality and fish habitat it is expected that the Sanctuary would have a positive impact on fishing activities.

The Sanctuary regulations include four regulations that (if written without the exemption) could potentially have an indirect effect on fishing activities. However, each of the four regulations specifically exempts traditional fishing activities from the scope of the prohibitions to the extent consistent with other existing state and Federal regulations.

The four regulations are: (1) discharges and deposits (including those from fishing vessels) are prohibited except for stated discharges and deposits including ones intended to allow traditional fishing activities; (2) moving, removing, or injuring or attempting to move, remove, or injure a Sanctuary historical resource is prohibited, except resulting incidentally from traditional fishing operations; (3) drilling through, dredging or otherwise altering the seabed or the Sanctuary or constructing, placing or abandoning any structure, material or other matter on the seabed of the Sanctuary is prohibited, except resulting incidentally from traditional fishing operations i.e., the use of traps and bottom trawls, and gear recovery; and (4) taking of marine mammals, reptiles, and seabirds is prohibited, except as permitted by regulations promulgated under the MMPA, the ESA, and the MBTA. Thus, each regulation otherwise potentially affecting traditional fishing activities is specifically designed to exclude such activities from the effect of the regulation. However, if in the future NOAA determines that these exemptions are resulting in injury to Sanctuary resources or qualities from aquaculture, kelp harvesting or traditional fishing activities, changes to the Sanctuary regulations may be undertaken pursuant to the Administrative Procedure Act's (APA) notice-and-comment rulemaking process and the applicable requirements of NEPA and the MPRSA.

Aquaculture activities would also be unaffected by the regulatory regime. NOAA will work with the WDF and DNR and kelp harvesting and aquaculture user groups if new activities are proposed or increases in current levels to determine the impacts, if any, of the activity on the resources and qualities of the Sanctuary.

There are many existing regulations and restrictions on fishing activities in the Sanctuary designed to protect the long-term health of fisheries and other resources and qualities of the region. Therefore, NOAA does not believe it is necessary to promulgate any additional regulations.

In its evaluation of the issue, NOAA considered whether, under the present regulatory structure, sufficient protection for Sanctuary resources existed. NOAA has determined, after consultation with the USFWS, NMFS, PFMC, WDF, and DNR that fishing in the Sanctuary, including fishing for shellfish and invertebrates, shall not be regulated as part of the Sanctuary management regime. Fish resources of the Sanctuary are already

extensively managed by existing authorities and NOAA does not envision a fishery management role for the Sanctuary at this time. Instead the Sanctuary will provide research results and recommendations to existing fishery management agencies in order to enhance the protection of fishery and other Sanctuary resources.

Furthermore, in its decision advising NOAA to proceed with the preparation of a DEIS/MP for the Sanctuary, the PFMC also recommended that the regulation of fishery resources remain under the jurisdiction of the State of Washington, the NMFS, the Tribes, and the PFMC.

2. Sanctuary Alternative

a. Sanctuary Action

If NOAA were to consider regulating fishing in the Sanctuary it would first provide the PFMC with an opportunity to prepare draft regulations for fisheries within the EEZ should the need arise to protect Sanctuary resources and qualities from specific fishing activities. Any changes to Sanctuary regulations would be undertaken pursuant to the APA's notice-and comment rulemaking process and the applicable requirements of the NEPA and MPRSA. In the future the Sanctuary will work with fishermen and management agencies including the WDF, the PFMC, and the coastal tribes to determine any additional management measures that may be necessary to protect the resources and qualities of the Sanctuary. Such actions will be submitted in draft for public review and comment on any specific measures taken to address threats from fishing to Sanctuary resources and qualities. Finally an MOA has been prepared between NMFS and NOS regarding fisheries and protection of Sanctuary resources (Appendix J).

b. Impact to Resources

Actions promulgated under this authority will be targeted at protecting specific resources, qualities and habitats shown to be injured by fishing activities, aquaculture or kelp harvesting. Such injury could include, but is not limited to, destruction of benthic habitat from bottom trawling, incidental take of marine mammals and seabirds from gill nets, evidence of reductions in fish stock size, degradation in water quality and disruption of the seabed from aquaculture and negative impacts to sea otter habitat during kelp harvesting operations.

c. Impact to Uses

Under this alternative NOAA will work with affected fishing, aquaculture and kelp harvesting entities to assess the level of impact of their activities. Actions will be taken to minimize negative consequences while at the same time addressing any threat to Sanctuary resources and qualities.

J. Naval Inert Bombing Practice at Sealion Rock

1. Status Quo

a. Existing Regulatory Framework

The Navy voluntarily ceased practice bombing activities over Sealion Rock. On August 18, 1993, the Secretary of Interior rescinded the permit authorizing the Navy to use Sealion Rock as an alternate practice bombing site. Therefore, the Navy may not use Sealion Rock for practice bombing exercises unless it receives a new authorization from the Secretary of the Interior.

b. Impact to Resources

The Navy's past bombing activities over Sealion Rock had the greatest impact on seabirds and marine mammals. Seabirds and marine mammals exhibit startle reactions to the loud noise of the A6 bombers. When seabirds flush from their nests in a startle reaction they often knock their chicks from nests, leave them vulnerable to prey by other birds such as gulls, or in the case of common murres which hold their egg in their feet, drop their eggs. All three reactions are extremely detrimental to seabird populations which are vulnerable to population impacts because they are colonial, mature late in their development, and produce only a few offspring at a time. Most of the colonial seabird populations in the Sanctuary are showing signs of serious decline due to a variety of factors. Perhaps most indicative of this decline are the common murres, whose population has plummeted from approximately 30,000 in 1980 to approximately 3,000 in 1992 (Table 7).

Marine mammals also react in a startle response in such a way as to endanger the young. When startled, pinnipeds stampede into the water often crushing the young in the process.

c. Impact to Uses

Under this alternative the Navy may not use Sealion Rock without a new authorization for the Secretary of the Interior.

2. Sanctuary Alternative (Preferred)

a. Sanctuary Action

The Navy's use of Sealion Rock as a practice bombing target is determined to be incompatible with Sanctuary designation. Therefore, the Sanctuary will prohibit all bombing activities within the Sanctuary. Further, the regulations will provide that no exemption from this prohibition may be issued.

b. Impact to Resources

This prohibition will provide maximum protection to the seabirds and marine mammals by ensuring that they are undisturbed

Table 7. Number of Common Murres at Major Breeding Sites on the Outer Coast of Washington, 1979-1992.

COLONY LOCATION	YEAR													
	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
White Rock	120	--	--	630	--	--	--	--	55	--	--	450	175	175
Jagged Isl.	--	--	155	--	--	--	655	--	800	450	480	250	25	250
Petrel Isl.	480	1600	--	855	1200	620	--	350	1480	--	--	--	--	--
Quillayute Needles	1555	1590	300	900	30	--	175	450	2370	2650	1870	2210	1450	2120
Rounded Isl.	2130	3435	850	2180	200	800	300	--	--	--	--	--	--	--
Middle Rock	--	--	--	--	--	--	1800	450	--	--	--	--	--	--
Willoughby Isl.	5300	3115	3800	5270	850	--	--	40	--	35	200	15	75	--
Split Rock	9150	3075	8350	10450	--	--	100	--	450	50	75	--	150	--
Point Grenville Isls.	3800	3595	1650	3640	910	1050	300	1600	450	50	75	125	425	500
Grenville Arch	8985	5825	3250	5015	--	--	50	15	5050	250	75	850	25	50
TOTALS	31520	22235	18355	28940	3190	2470	3380	2905	10655	3895	3675	3900	2325	3095

during the most sensitive time in their ecology.

c. Impact to Uses

This alternative could place an operational inconvenience on the Navy. The prohibition on bombing activities within the Sanctuary will provide a more positive experience for those individuals living on the Peninsula or visiting the Olympic National Park, and Olympic Coast National Marine Sanctuary.

III Section: Management Alternatives

A. Introduction

Three management alternatives were identified and considered in terms of (1) resource protection, research, and education requirements, and (2) cost-effectiveness. The Management Plan (Part V) includes a detailed discussion of the proposed Sanctuary management regime regarding resource protection, research, education and administration.

B. Alternatives

1. Status Quo

Under this alternative protection and management of the Sanctuary will remain entirely under the existing regime of Federal, state and local authorities, and existing research and education facilities and programs with no NOAA presence.

2 Sanctuary Management Alternative 1 (Preferred)

Under this alternative, NOAA would establish an independent management and administrative system for the Sanctuary in a headquarters that is managed and operated directly by NOAA. The location of the headquarters will initially be in Seattle at NOAA's Sand Point Facility. Staffing will initially include a NOAA Sanctuary and operations manager and phase in an assistant manager, research and education coordinator and a joint position of an interpreter/enforcement official.

The office would coordinate directly and actively with other state and local agencies in decision making and implementation of Sanctuary regulations. The priority in the first two years would be to establish the Sanctuary Steering Committee and initiate a comprehensive planning initiative to identify research, education and administrative priorities and siting of offices on the Olympic Peninsula.

3. Sanctuary Management Alternative 2

This alternative establishes Sanctuary headquarters on the Peninsula soon after designation (within six months) and immediately provides full-staffing in the positions described for Sanctuary management alternative 1. The priority of this alternative is immediate full staffing and siting of headquarters and satellite offices immediately after designation rather than immediate investment in a watershed planning initiative. The feasibility of this alternative depends upon the availability of funding.